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NAS WILLOW GROVE
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WORK PLAN AND SITE SPECIFIC HEALTH AND SAFETY PLAN

SITE 5 FIRE FIGHTING TRAINING AREA
SOIL REMOVAL

NAVAL AIR STATION JOINT RESERVE BASE
WILLOW GROVE, PENNSYLVANIA

PROJECT EM-54
(Including Modification One)

CONTRACT NO. N62472-99-D-0826

PREPARED FOR:

Department of the Navy
Engineering Field Activity Northeast (EFANE)
10 Industrial Highway
Lester, PA 19029

PREPARED BY:

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21 September 2005
Modified 7 August 2006

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ACRONYMS AND ABBREVIATIONS

Clean Earth	Clean Earth of Philadelphia
COC	Contaminants of Concern
EFANE	Engineering Field Activity Northeast
EPA	Environmental Protection Agency
FTA	Fire Fighting Training Area
HASP	Health and Safety Plan
JRB	Joint Reserve Base
NAS	Naval Air Station
PADEP	Pennsylvania Department of Environmental Protection
PAH	Total Organic Carbon
RFQ	Request for Quotation
RMC	Resource Management Concepts, Inc.
ROICC	Resident Officer in Charge of Construction
SAP	Field Sampling and Analysis Plan
SVOC	Semi-volatile Organic Compound
TtNUS	Tetra Tech NUS, Inc.

1 SCOPE OF WORK

1.1 GENERAL SCOPE OF WORK

The general goal of this project is to meet the requirements of the request for quotation N62472-05-Q-EM54 (RFQ) issued by the Engineering Field Activity Northeast (EFANE) on 11 April 2005. The RFQ was issued with attachments and appendixes that are taken to be part of the overall RFQ. These attachments and appendixes included a site investigation report by Tetra Tech NUS, Inc. (TtNUS), a summary of the soil sampling analytical results by TtNUS, and a diagram of the remediation site labeled Figure 3 (see Appendix B). The scope of work as issued by the Navy can be found in Appendix A.

1.2 SUMMARY SCOPE OF WORK

In summary, the scope of work for this project is to perform site remediation at the area of the former "burn ring." The burn ring was a site where excess or used aircraft fuel could be set ablaze inside a steel ring, or burn ring, and the fire crews could practice extinguishing the fire. The training area was used from 1942 to 1975. This site is known as the Site 5 -- Fire Fighting Training Area (FTA). The site is contaminated by the products of incomplete combustion and requires remediation.

1.3 REQUIRED TASKS AND ORDER OF WORK

1.3.1 Tasks

The tasks associated with the site remediation include the following:

1. The delivery and approval of this Work Plan and HASP
2. The collection of soil samples for waste characterization, and the transfer of the samples to an accredited analytical laboratory
3. The removal and disposal of the burn ring and trash and debris inside the burn ring
4. The removal and disposal of the contaminated soil around the burn ring approximately 50 feet in diameter to a depth of approximately 2 feet below grade, and the removal and disposal of the contaminated soil from an area extending westward from the burn ring for approximately 70 feet by 10 feet wide to a depth of approximately 2 feet below grade
5. Soil sampling from within the excavated area to confirm that the contamination has been removed from the site, and the transfer of the samples to an accredited analytical laboratory
6. The backfill of the excavated area with certified backfill, including a final layer of top soil, with hand broadcast grass seeding and a hand distributed covering of straw
7. A close-out report

Table 1-1: General Sequence of Tasks for EM-54

TASK NO.	TASK DESCRIPTION	PRELIMINARY SCHEDULE
1	Preparation of work plan and site-specific HASP	Submittal 21 July; Approval 1 August
2	Project kick-off	8 August
2a	Inspection of the area	8 August
2b	Collection of samples for waste characterization and transfer to analytical laboratory	8 August; Analytical results received by 25 August
3	Mobilization to the site and removal of the burn ring and debris; the area for soil removal will be marked with orange paint or pin flags	29 August
3a	Marking of active utilities at the site, if any	29 August
4	Removal of contaminated soil and transfer to Clean Earth of Philadelphia	31 August
5	Confirmation sampling of the excavation and transfer of samples to analytical laboratory	1 September; Analytical data received by 20 September
5a	Submission of summary report of confirmation sampling	25 September
6	Submission of backfill and top soil certification data	6 October
6a	Backfill of the excavated area	12 October
6b	Final layer of top soil	12 October
6c	Hand broadcast seeding and topping of straw	13 October
7	Final project close-out report	26 October

1.3.2 Order of Work and Preliminary Project Schedule

Table 1-1 lists the tasks above including additional details. Table 1-1 also contains estimates of the timing of the tasks: therefore, Table 1-1 is the preliminary project schedule for this project.

1.4 LOCATION OF WORK

The FTA is located in the south-central portion of Naval Air Station (NAS) Joint Reserve Base (JRB) Willow Grove, Pennsylvania, approximately midway between Runway 10/28 and State Route 463. The site is located immediately to the south of Taxiway Juliet and covers an irregularly shaped area of approximately 1.25 acres. The FTA is primarily covered by grasses, with some woody and brushy vegetation present within the southern portion of the area. The burn area is located in the south-central portion of the site. Figure 1-1 (page 6) illustrates the location of the work site. The work is limited to the burn ring area and the rectangular area extending westward from the burn ring as described below.

1.5 LIMITATIONS OF WORK

The soil remediation is limited to the general area indicated by Figure 1-1 and by the RFQ attachment located in Appendix B. According to the request for quotation issued by the Navy, the excavation area is limited to the "hot spots" indicated in the report that accompanied the RFQ and by the figure in Appendix B. The total quantity of soil to be excavated for disposal is approximately 230 cubic yards. Additional debris near the work area is not in the scope of work.

1.6 CONTAMINANTS OF CONCERN

The RFQ establishes the contaminants of concern (COC) as polyaromatic hydrocarbons (PAH), total organic carbon (TOC) and pH. The contaminants of concern and the analytical method are listed in Table 1-2.

Table 1-2: Contaminants of Concern and Analytical Method

COC	Analytical Method
PAH	8270
TOC	9060
pH	Standard meter, saturated soil

1.7 QUANTITY OF SOIL FOR REMEDIATION

The site characterization soil sampling results are in the TtNUS report that was attached to the RFQ, and those data may be reviewed separately.

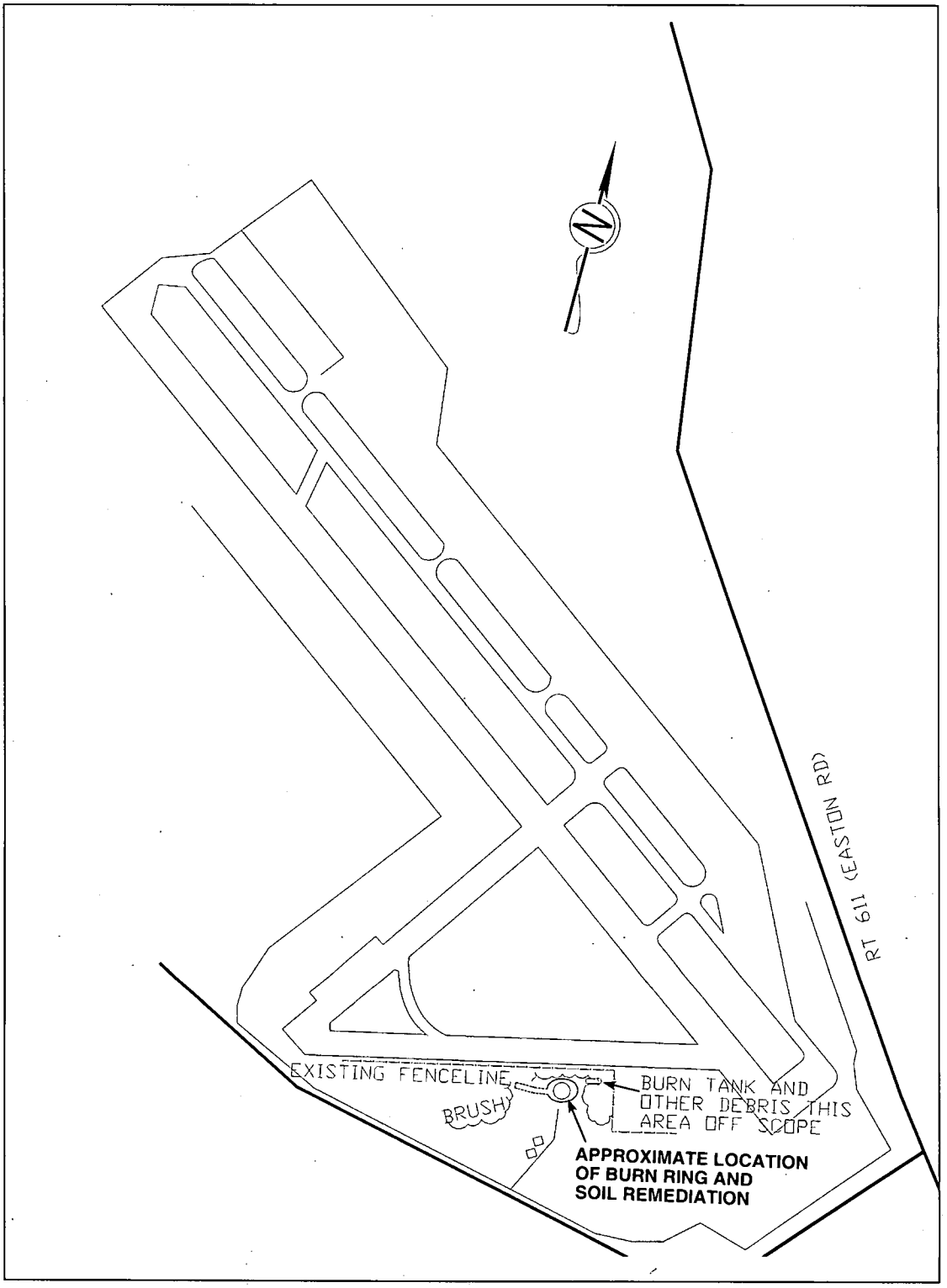


Figure 1-1: Location of Work Site

According to the TtNUS report, the estimated volume of soil for disposal is 230 cubic yards. Soil to be disposed of would be excavated from a trench that is 65 feet long, 10 feet wide, and 2 feet deep, which includes hotspots 05SS45 and 05SS31 (as indicated on Appendix B). The excavation in the former burning ring area would include sample location 05SS43 and a 25-foot radius around the former burn ring, as well as the steel burn ring itself. It is anticipated that the excavated soil will be non-hazardous, non-residual waste which may be disposed of in a Subtitle D landfill. Figure 1-2 is derived from the information above and from the figure in Appendix B.

Resource Management Concepts, Inc. (RMC) will mark the area for excavation with orange paint or pin flags, and allow for additional space around the perimeter. The ROICC or designated representative will be asked to approve the marked site for excavation.

1.8 WASTE CHARACTERIZATION AND DISPOSAL

It is expected that the non-hazardous waste will be transported to the Clean Earth of Philadelphia, Inc. (Clean Earth) thermal treatment facility for ultimate disposal. (It is possible that this plan will need to be amended in the future to transport the soil to a landfill for ultimate disposal.) Clean Earth will require the analyses in Table 1-3 to demonstrate that the soil is non-hazardous. Allowing for up to 250 cubic yards of waste earth at 1.4 tons per cubic yard, approximately 350 tons of material will be transported for disposal. From Table 1-3 it can be determined that three grab samples and one composite sample will be required.

Table 1-3: Waste Characterization Samples and Analysis for Waste Petroleum Soil

Frequency	Sample Type	Analysis	Method	Limit
First 90 Tons	Grab	TPH DRO to C-44 TOX	8015M 9023	<400,000 <1000
Second 90 Tons	Grab	TPH DRO to C-44 TOX	8015M 9023	<400,000 <1000
Every 180 tons thereafter	Grab	TPH DRO to C-44 TOX	8015M 9023	<400,000 <1000
Every 900 Tons	Composite	Total Metals** TCLP Metals** Ignitibility Corrosivity Reactivity-Sulfide/Cyanide PCBs BTEX	3050/6010 1311/6010 1010 9040 SW-846 7.3 8082 8260/8021	none TCLP Limits negative >2 - <12.5 RCRA Limits <50 <30,000*
	**Includes As, Ba, Cd, Cr, Cu, Hg,Ni, Pb, Se, Ag, Zn			
	*<0.5mg/L TCLP Benzene			

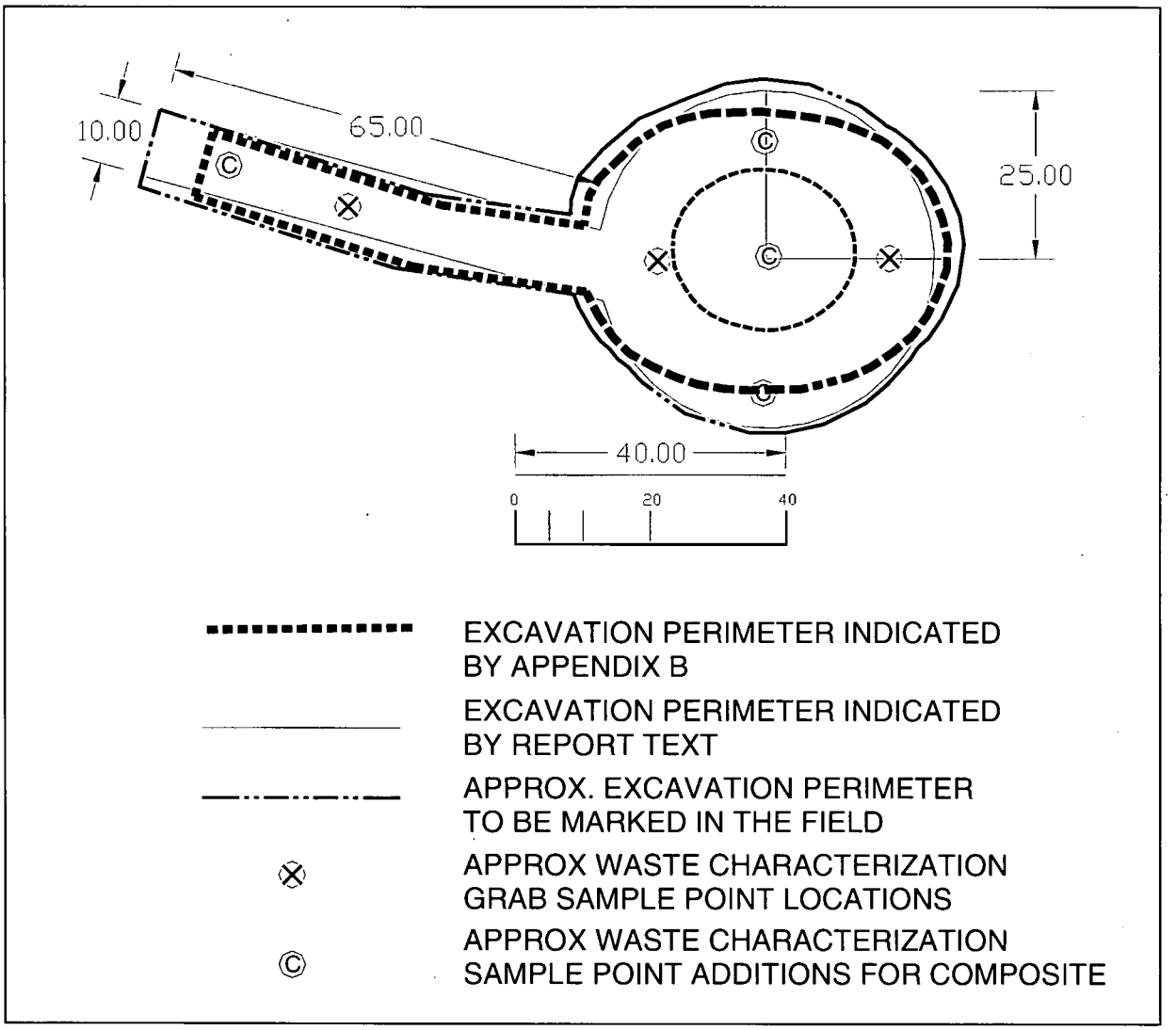


Figure 1-2: Detail of Excavation Area Comparing Appendix B and Report Text with Locations of Characterization Sample Collection

The samples will be collected from 0-2 feet below the existing grade using a standard core sampling tool. The approximate location of each sample is indicated on Figure 1-2, and the sampling protocol is detailed in Section 3.

1.9 LOADING, TRANSPORTATION AND DISPOSAL

1.9.1 Loading and Hauling

The TtNUS summary of soil analyses indicates that the soil is contaminated and does not meet the requirements for unrestricted use, but the soil is not considered hazardous for reasons of transportation and disposal. Ordinary construction equipment will be used to load the trucks of a common hauler in the business of hauling soil, stone, and debris, and the contaminated soil will be transported to the disposal site.

One equipment operator and one laborer will be used to excavate and load the soil. The HASP of this report describes the health and safety issues of this project.

1.9.2 Pennsylvania Department of Environmental Protection *Form U*

As soon as the waste characterization data is received, RMC will provide the Pennsylvania Department of Environmental Protection (PADEP) *Form U* for signature by a representative of NAS/JRB Willow Grove. A preliminary copy of PADEP *Form U* is located in Appendix C of this report.

1.9.3 Required Documentation - Manifests

A manifest will be required to remove the contaminated soil from NAS/JRB Willow Grove. RMC will provide the manifests to be signed by a representative of NAS/JRB.

1.9.4 PADEP *Form U*

As soon as the waste characterization samples are received, the PADEP *Form U* will be submitted on behalf of NAS/JRB Willow Grove. The preliminary *Form U* is located in Appendix C.

1.10 SPECIFICATIONS AND DOCUMENTATION

1.10.1 Equipment Specifications

Equipment is not being installed on this project. Therefore, there are no equipment specifications.

1.10.2 Work Specifications

There are no specific work specifications for this Work Plan.

1.10.3 Excavation and backfill

The work performed under this project will generally follow the Unified Facilities Command *SpecsIntact* Section 02315N, "Excavation and Backfill." Section 02315 also provides specifications for certified backfill.

1.10.4 Permit Document Preparation

No permits are required for this project.

1.11 CERTIFIED BACKFILL

This site is being restored to match the open grassy fields surrounding, and it will not be backfilled and compacted to a construction standard. The backfill will be tamped in place using the bucket of a backhoe or other mechanical devices to remove voids and to completely distribute the fill. No compaction testing will be provided, and the backfill will not be classified.

In as much as possible, backfill will be selected from an area with soil generally similar to the soil at the site. As mentioned above, RMC will generally follow the requirements of *SpecsIntact* Section 02315N. Since sources of backfill are constantly changing depending on what other excavations and construction projects are in the area, no specific borrow site is nominated at this time. Based on the quantity of fill required for this project only one test is required for the backfill.

The final layer of backfill will be a topsoil layer approximately six inches thick. The topsoil will be tested according to Section 02315N unless the top soil is removed from the same borrow site as the backfill, in which case only one test for the backfill and topsoil will be provided.

1.12 CONFIRMATION SAMPLING

Confirmation samples will be collected according to procedures outlined in Chapter 2 on Table 1 and Table 2 of the Pennsylvania Land Recycling Program (PA Act 2, 1995). According to PADEP Ch. 250 LAND RECYCLING PROGRAM

> (d) For statistical methods under § 250.707(b)(1)(i) (relating to statistical tests), the number of sample points required for each distinct area of contamination to demonstrate attainment shall be determined in the following way:
> (1) For soil volumes equal to or less than 125 cubic yards, at least eight samples.
> (2) For soil volumes up to 3,000 cubic yards, at least 12 sample points.
> (3) For each additional soil volume of up to 3,000 cubic yards, an additional 12 sample points.

By considering the circular area around the burn ring and the rectangular area running west as separate distinct areas of contamination, TtNUS has estimated that, based on Table 1 and Table 2 of PA Act 2, a sum of 8 bottom samples and 12 sidewall samples should be collected from the excavation, as indicated on the figure in Appendix B.

The overall area was subdivided into a grid of 208 one-yard-square areas. The circular area around the burn ring was divided into 130 areas in a series of concentric rings, and the rectangular area was divided into 75 one-yard squares. The subdivided areas were sequentially numbered, and a random number generation program was used to select squares for sampling. The restrictions on the random number generator were that 12 selections must have been in the outer areas in order to have 12 sidewall choices. These 12 choices were eliminated from the sequential numbers and eight bottom samples were randomly selected. At least one selection had to be within the area of the burn ring. Figure 3 indicates the approximate locations of the randomly generated sampling points.

The data will be transmitted to the Resident Officer in Charge of Construction (ROICC) as a summary table, with the original results received from the laboratory and electronic data from the laboratory included as backup information.

2 DELIVERABLES FOR THE PROJECT

2.1 WASTE CHARACTERIZATION REPORT

The ultimate disposal site for the contaminated soil is expected to be the Clean Earth thermal treatment facility. For this work, Clean Earth will require a mixture of grab samples and composite samples demonstrating that the soil is non-hazardous. This project is quite small, and it is expected that only three to five samples will be required by Clean Earth.

RMC will transmit the results of the waste characterization samples to the ROICC as soon as they are available. Assuming that the samples are in general agreement with the preliminary data, RMC does not propose to wait for any further approval before removing the soil.

2.2 MANIFESTS

Upon receipt of the analytical data for soil characterization, RMC will prepare the manifests for delivery from NAS/JRB to Clean Earth. A typical manifest will be submitted to the ROICC as soon as the characterization report is available. It is expected that a representative of NAS/JRB must sign the manifests. RMC will also prepare the PADEP *Form U* for signature by a representative of NASJRB.

2.3 VERIFICATION SAMPLING

Confirmation samples will be collected according to procedures outlined in Chapter 2 on Table 1 and Table 2 of the Pennsylvania Land Recycling Program (PA Act 2, 1995). TtNUS has estimated that, based on Table 1 and Table 2 of PA Act 2, a sum of 8 bottom samples and 12 sidewall samples should be collected from the excavation, as indicated on the figure in Appendix B and depicted in Figure 2-1 of this Plan. For statistical reasons a total of 9 bottom samples were collected.

The data will be transmitted to the ROICC as a summary table, with the original results received from the laboratory and electronic data from the laboratory included as backup information.

2.4 FINAL DOCUMENTATION

A final report that includes all pertinent and required documentation will be submitted. A report will be prepared and submitted to the Navy EFANE project manager, on-site representative, and ROICC. The final report will document the fate and ultimate disposal of the soil and the results and location of all soil sampling, including electronic submittals of the laboratory data. The final report will be submitted by hard copy and electronic submission.

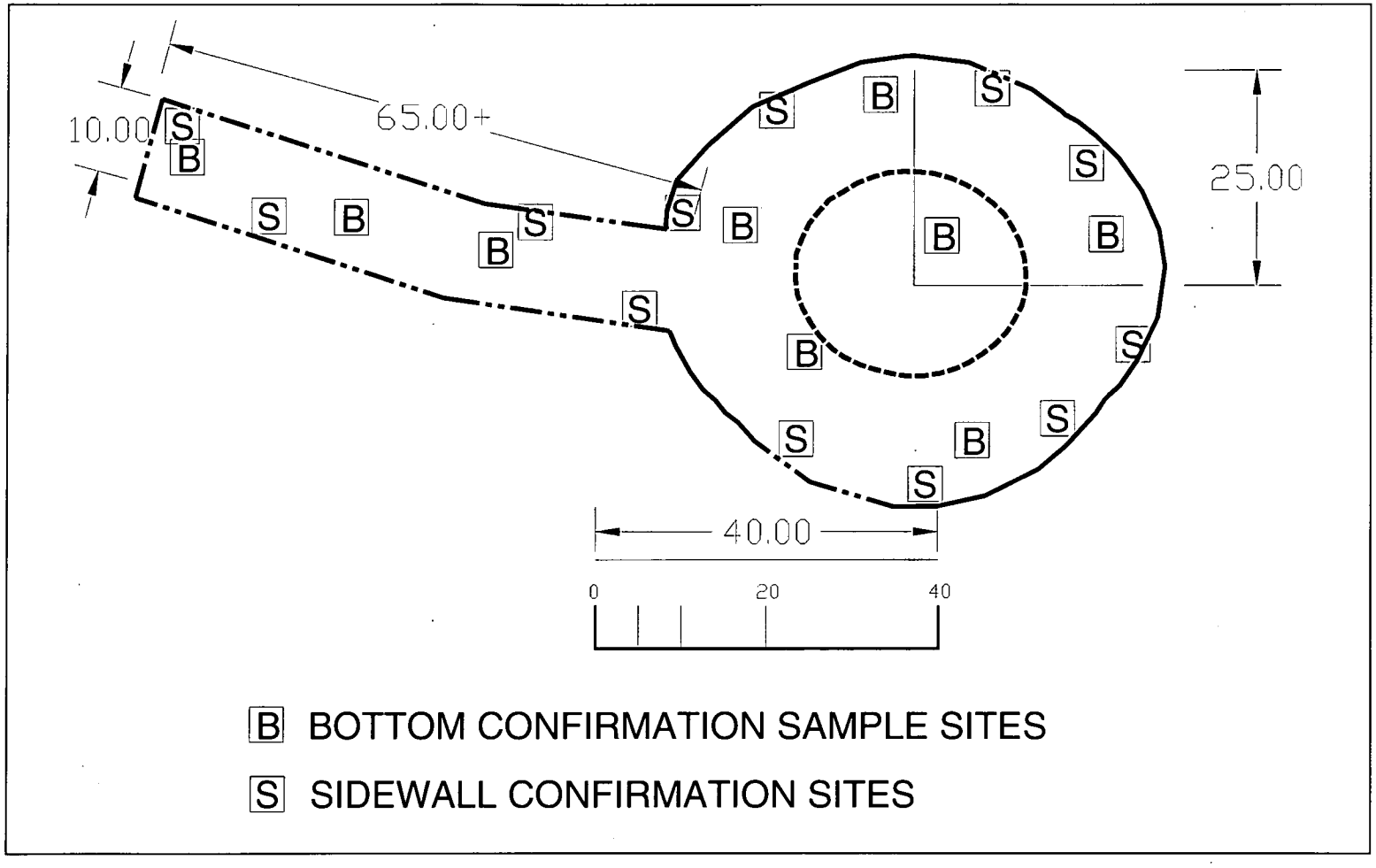


Figure 2-1: Confirmation Sampling Points

3 SAMPLING, REPORTING, AND QUALITY ASSURANCE PROJECT PLAN

3.1 INTRODUCTION

Because of the limited scope of this project, the actual requirement is a *Field Sample and Analysis Plan*, or SAP. The SAP is detailed in the following sections of this plan.

3.2 FIELD SAMPLING AND ANALYSIS PLAN

3.2.1 Sampling Requirements

The sampling requirements are discussed under Subsection 1.12 on page 9.

3.2.2 Duplicate Samples for Quality Control

No duplicate sample will be required for the waste characterization samples. One duplicate sample for quality control purposes will be collected along with the confirmation samples, or a total of 21 samples. This sample will be submitted blind to the analytical laboratory.

3.2.3 Analytical Subcontracted Laboratory

Resource Management Consultants, Inc. (RMC), maintains a working relationship with American Analytical Laboratories of Farmingdale, NY, as well as other reputable analytical laboratories. American Analytical Laboratories has a Quality Assurance/Quality Control (QA/QC) Third Party Validation plan on file with the Environmental Protection Agency (EPA), and American Analytical Laboratories is certified by the State of Pennsylvania. American Analytical Laboratories has the capability of submitting the data to the Navy in electronic format.

American Analytical Laboratories Corp
(631) 454-6100
56 Toledo St
Farmingdale, NY 11735

PA certification # 68-00573.

The PAH analysis is a subset of the semi-volatile organic compounds (SVOCs) analysis. Analytical methods for soil are:

- TCL SVOC by 8270
- TOC by 9060

3.2.4 Sample Collection and Sampling Tool Decontamination

The soil samples will be placed in new eight-ounce glass sample jars. The shipping container is a common cooler. Special preservatives and cooling are not required for SVOC and TOC. Due to the rocky nature of the site soil sampling and core sampling tools cannot be used. Each sample jar will be labeled and marked before collecting the sample. The chain of custody (CoC) will be prepared before entering the field, but it will be dated and signed at the site.

Soil will be collected in the following manner:

- Sampler personnel will wear a fresh pair of disposable vinyl gloves for each sample point.
- From a selected sampling site, grass, weeds, and debris will be removed to expose the soil.
- A sterile sample scoop will be used to collect soil from the interstices and from the surface of stones.
- The soil will be placed in a commonly available plastic freezer bag, and stones, pebbles, sticks, and debris will be moved to the top of the sample. The sample will not be shaken, vigorously mixed, or agitated.
- A corner will be cut from the plastic bag, and a portion of the sample extruded into a labeled sample jar to completely fill the sample jar (no head space).
- The sample jar will be wrapped to prevent breakage and promptly placed in the shipping cooler.
- When all samples have been placed in the cooler, the CoC will be placed in the cooler and the cooler taped shut with packaging tape. There is no need to place a custody seal on the cooler for these samples.
- The cooler will be taken to a package shipping location for overnight transport to American Analytical Laboratories or self-transported to the Laboratory.

For any sampling tool that is reused in the field, the tool must be decontaminated. The sampling equipment used for collecting samples will be decontaminated before field sampling, between samples and after sampling activities. The following decontamination steps will be followed when sampling for PAHs:

- Alconox or liquinox detergent solution wash.
- Potable water rinse.
- Deionized water rinse.
- Air dry.
- Wrap in aluminum foil (if not immediately used).

3.2.5 Sample Quality Assurance/Quality Control

Sample QA/QC will be by redundant samples. Redundant soil samples equaling 5% of the total number of samples and at least one redundant sample for each activity will be collected. The redundant samples will be submitted blindly to American Analytical Laboratories. That is, the laboratory will not be advised that redundant samples have been submitted or which samples are redundant samples.

3.2.6 Chain of Custody

The chain of custody will be as follows:

- RMC personnel will collect the samples in the field. Samples will remain in the possession of the RMC field lead at all times.
- The RMC field lead will certify the chain of custody documentation.
- The RMC field lead will deliver the shipping container to a common carrier; i.e., UPS, for speedy delivery to the laboratory.
- The laboratory will receive and certify the chain of custody.

4 SITE SPECIFIC HEALTH AND SAFETY PLAN

4.1 INTRODUCTION

This site HASP was prepared by RMC. Its purpose is to define requirements and designate protocols to be followed during soil sampling and the removal and disposal of the approximately 230 cubic yards of contaminated soil at the FTA at NAS/JRB Willow Grove, Pennsylvania. The applicability of this HASP extends to all personnel at the site during the period of work, including government employees, contractors, subcontractors, and visitors present at the work site.

This HASP summarizes potential hazards associated with the planned activities and defines protective measures. The requirements set forth in this HASP are based on standard safety and health precautions applicable to typical construction activities at "brownfield" sites. Although this HASP is intended to be as site-specific as possible, it also contains general features common to construction-type activities in order to allow for changing and unknown site conditions. It also provides for emergency response actions. A qualified and experienced site supervisor provided by RMC or its designated subcontractor shall properly implement this HASP. The site supervisor, in coordination with the project manager, will identify when additional requirements are necessary and ensure that this plan is supplemented and expanded as needs dictate.

In general, the job site conditions and exposures should be monitored to the extent described, and the requirements of this HASP should be enforced. However, RMC does not assume responsibility for non-contracted duties relative to the client's or subcontractor's safety and health programs. This HASP addresses potential hazards and unsafe work practices associated with construction activities but is not intended to be all-inclusive. Although this HASP does not address all matters relating to general construction safety compliance, all applicable regulations apply and are the sole responsibility of each contractor working on site. Applicability of this HASP extends to all employees, contractors, subcontractors, and visitors.

4.2 SCOPE OF WORK AND GENERAL HAZARDS

The general scope of work covered under this contract is for the collection of soil samples and the removal of approximately 230 cubic yards of contaminated soil. In general, the hazards associated with the work activities at the sites will be controlled by:

- awareness training
- the use of trained, qualified personnel
- oversight attentive to safety

4.3 ROLES AND RESPONSIBILITIES

All site personnel will review the HASP prior to site operations. Key project staff personnel are listed in Sections 4.3.1 through 4.3.4, including their duties and responsibilities.

4.3.1 Project Manager

RMC's Project Manager (PM) for this project will be William T. Hall, P.E. The PM assumes the responsibility for providing management of the overall project, including health, safety, and environmental concerns as supported by the site supervisor. The PM will review deliverables and manage all resources, schedules, and budgets. The PM is responsible for coordinating the overall project and reporting contractor man-hours. Specific responsibilities of the PM include:

- Coordinating all aspects of on-site activities, providing overall direction maintaining health and safety activities, and maintaining contract specifications
- Identifying and categorizing the hazards and associated risks for the conditions to be encountered on site based on data provided
- Coordinating with the Department of the Navy designated PM
- Providing overall supervisory control for all health and safety protocols in effect for the project
- Reviewing reports of incidents related to project activities
- Assigning a site supervisor who will assume the respective responsibilities and enforce all provisions of the HASP

4.3.2 Site Supervisor

The site supervisor is responsible to the PM for day-to-day oversight of all on-site activities, including the health and safety practices of personnel during site activities and compliance with the HASP. The site supervisor will be on site at all times throughout the project. The specific responsibilities of the site supervisor include:

- Implementing all on-site safety monitoring procedures and operations included in this HASP
- Presenting initial health and safety briefings to all on-site workers and visitors
- Conducting daily and weekly safety inspections
- Leading weekly health and safety awareness meetings throughout the project
- Overseeing all necessary monitoring, including exposure and heat stress monitoring
- Ensuring that proper response actions are followed
- Updating health and safety monitoring equipment or procedures based on new information gathered during the site inspections

- Authorizing the upgrading or downgrading of the levels of personal protection in conjunction with the site supervisor based on site observations and monitoring in accordance with predetermined and approved criteria
- Determining and posting locations and routes to medical facilities (including poison control centers) and arranging emergency transportation to medical facilities (as required)
- Notifying (as required) local public emergency officers (e.g., police and fire departments) of the nature of the team's operations and making emergency telephone numbers available to all site workers
- Ensuring that at least one member of the project team is available to stay behind and notify emergency services if the on-site supervisor must enter an area of maximum hazard
- Observing workers for symptoms of on-site exposure or stress
- Monitoring compliance with the HASP and assisting in enforcement measures
- Supervising decontamination procedures on personnel, tools, and equipment to ensure that the procedures are followed and are effective
- Preventing site entry of unauthorized personnel or coordinating with local law enforcement agencies or state authorities to limit site access
- Coordinating site activities so they may be performed in an efficient and safe manner consistent with the HASP
- Ensuring the ready access and availability of all safety equipment
- Preparing mishap reports, as necessary
- Arranging for the availability of on-site emergency medical care and first aid, as necessary

The site supervisor has the authority and responsibility to stop any operation that threatens the health or safety of the team or surrounding populace or that causes significant adverse impact to the environment.

4.3.3 Site Workers

All site workers conducting activities in or around impacted areas are responsible for understanding and complying with the requirements of this HASP. The responsibilities of site workers include:

- Attending tailgate safety meetings
- Obeying safety- and health-related orders from the site supervisor
- Performing work activities in a safe manner in accordance with this HASP and good work practices

4.3.4 Site Visitors

All visitors, including government representatives, are required to comply with all provisions of the HASP. The responsibilities of site visitors include:

- Alerting the site supervisor of their presence on site
- Complying with all aspects of the HASP
- Obeying safety and health-related orders from the site supervisor

4.4 REGULATORY REQUIREMENTS

Occupational Safety and Health Administration (OSHA) standards 29 Code of Federal Regulations (CFR) 1910 and 1926 apply to work performed under this HASP.

4.5 SAFETY AND HEALTH POLICY

The purpose of this HASP is to help protect workers and other on-site personnel, the public, and the environment from exposures associated with site activities and potential site contaminants. This HASP includes preventive and protective measures against physical or chemical health hazards that may exist or develop during field operations based on conditions that are believed to exist, as well as other OSHA regulations and policies.

4.6 PERSONNEL TRAINING REQUIREMENTS

In addition to requirements for workers actually conducting clean-up activities, OSHA's 29 CFR 1910.120 also stipulates requirements for other workers, including subcontractors, who must perform activities on the site when uncontrolled hazardous substances are being handled. However, the regulation does not apply to workers at the site who will not be exposed to, or do not have the potential to be exposed to, hazardous substances. Ongoing professional judgment by site health and safety personnel is necessary and incorporated into this HASP to ensure that workers remain adequately protected. This HASP and any addenda are based on the assumption that such safety and health oversight will be provided on a continual basis during activities occurring in and around impacted areas at the site.

It will be the responsibility of the PM, with guidance from this HASP and the site supervisor, to identify potential training needs and timetables so that these requirements are met. Documentation of training shall be provided to the site supervisor.

Although no hazardous substances are expected to be encountered on this project, site personnel who may be exposed to hazardous chemicals (in the professional judgment of the site supervisor or the PM) are required to be trained in accordance with OSHA's 29 CFR 1910.120 regulation covering Hazardous Waste Operations and Emergency Response (HAZWOPER).

Personnel assigned to this project will have appropriate, documented training. In addition, supervisors shall complete additional appropriate supervisor training.

4.7 TRAINING AND BRIEFING TOPICS

The site supervisor or his designee at the site pre-entry briefing(s) and daily tailgate safety meetings, as deemed appropriate, will discuss the following items:

- Physical hazards, particularly lifting with heavy equipment
- Engineering controls and work practices
- Personal protective equipment
- Medical surveillance requirements
- Symptoms of overexposure to hazards
- Site control
- Emergency response plan

Refresher training shall be conducted, as necessary, for clarification or reiteration as determined by the site supervisor whenever new hazards are recognized and if addenda are added to this HASP.

Site-specific training will include information needed to ensure that the personnel working at the site are able to respond effectively to emergencies. This segment of the training will include a description of the communication systems to be used and the procedures for responding to fires and other emergencies. Briefings will be provided prior to site entry and, as required, each morning before work begins and after each day's field activities have been completed. The site supervisor will document the personnel in attendance and the topics addressed in the site briefings. The site supervisor will hold and document supervisory safety meetings to assess work performance.

4.8 EQUIPMENT OPERATIONS

No mechanized equipment is expected to be used on this project.

4.9 MEDICAL SURVEILLANCE

No specific medical surveillance is required or anticipated for this project. Should the results of the site survey indicate the potential for exposure at or above the OSHA permissible exposure limit, site workers shall be enrolled in an approved medical surveillance program for hazardous waste site workers. This program shall be designed in accordance with the recommendations found in the NIOSH/OSHA/U.S. Coast Guard/U.S. EPA's *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Operations* and shall meet the requirements of OSHA 29 CFR 1910.120. Physician's statements of findings shall be kept by the employer in the employees' personnel files and shall be available for review by authorized personnel.

4.10 DRUG AND ALCOHOL ABUSE

Alcohol and drug (non-prescriptive) use is strictly prohibited. Any employee found with possession of or under the influence of drug or alcohol will be removed from the sight, and disciplinary actions will be enforced.

4.11 HAZARD ASSESSMENT

4.11.1 Hazards

This section evaluates known or anticipated hazards associated with this project, as well as control measures, as needed. This HASP will be revised to address additional hazards as they are identified. Work may be halted until the hazards are sufficiently controlled. Because of the scope of work to be completed, all work-related plans are listed within this HASP.

Hazards associated with this project fall into three (3) categories:

- Work activity hazards
- Site contamination hazards
- Hazards of the locality (e.g., heat stress, flora, fauna)

In general, hazards will be controlled through:

- Awareness training
- Developing and following control measures
- Employing qualified, well-trained and experienced workers
- Reporting deficiencies in control measures or newly recognized control measures to the site supervisor

4.11.2 Work Activity Hazards

Hazards relating to this project are primarily associated with working in a rugged, unimproved area. The work activity will be near roads and on a Government reservation. Attention must be given to the presence of wildlife, stinging insects, and poisonous plants. No chemical hazards are anticipated.

4.11.3 Utility Line Identification

RMC has not been advised of any utilities in the area. However, prior to any work being initiated, all lines will be clearly marked and witnessed by an RMC representative or a representative of the subcontractor. To prevent any accidental electrocutions, any parties working in an area of utility uncertainty will discontinue operations until a search has confirmed that the area is free of any utility hazards. In addition, all overhead lines and underground utilities will be scouted prior to any hand digging or any equipment operations in the designated area.

4.12 TASK-SPECIFIC HAZARDS

The following subsections describe tasks/operations in terms of the specific associated hazards. In addition, protective measures to be implemented during completion of each operation are identified.

4.12.1 General Hazards

General hazard prevention can be accomplished by:

- Identifying the location of all utility lines or other physical hazards before work begins.
- Limiting manual lifting to prevent overexertion

4.12.2 Concrete Cutting and Removing

No concrete cutting or debris removal is expected on this project.

4.12.3 Heavy Lifting of Components

Soil will be gathered into the buckets of front end loaders or backhoes. No heavy lifting of materials or equipment using slings or similar lifting devices is expected.

4.13 WELDING, TORCH CUTTING, GRINDING, AND SAWING

No welding, torch cutting, or grinding is expected at this site.

4.14 CHEMICAL HAZARDS

There are no known chemical hazards associated with the performance of the work at this site. Ordinary work clothing is sufficient personal protective equipment (PPE).

4.15 HEAT AND COLD STRESS

Heat and cold stress can be major hazards. Although the period of work for this project in Pennsylvania is during a temperate time of the year, RMC has guidelines in place for heat and cold stress that will be observed.

4.15.1 Heat Stress

Heat stress can be an especial hazard for workers wearing protective clothing. The same protective materials that shield the body from chemical exposure limit the dissipation of body heat and moisture. Personal protective clothing can, therefore, create a hazardous condition. Depending on the ambient temperature and the work being performed, heat stress can occur very rapidly - within as little as 15 minutes. Heat stress can pose as great a danger to worker health as chemical exposure. In its early stages, heat stress can cause rashes, cramps, discomfort, and drowsiness, resulting in impaired functional ability that threatens the safety of both the individual and co-workers. Continued heat stress can lead

to heat stroke and death. Signs of heat stroke include hot, dry skin, elevated body temperature, and deliriums. RMC's site supervisor will avoid imposing overly protective PPE requirements, carefully train and monitor personnel wearing protective clothing, judiciously schedule work and rest periods, and encourage workers to frequently replace fluids to protect against the heat stress hazard.

4.15.2 Cold Stress

Cold stress will not be a factor during the course of this project.

4.16 NOISE

It is anticipated that the majority of the work will be hand work in an area of low ambient noise. However, there may be a need for motorized equipment, depending on the results of the site characterization tests. Work around large equipment often creates excessive noise. The site supervisor will assess the potential for excessive noise exposure at the job site and institute controls, as necessary. The effects of noise can include:

- Psychological effects from workers being startled, annoyed, or distracted
- Physiological effects including physical damage, pain, temporary and/or permanent hearing loss, and reduced muscular control (when exposure is severe)
- Communication interference that may increase potential hazards because of the inability to warn of danger or properly instruct workers on required safety precautions

Permissible noise exposures are defined in OSHA regulations (29 CFR 1910.95). Muffs, earplugs, or other noise attenuators shall be used for hearing protection, when necessary (i.e., when noise levels have the potential of exceeding 85 dBA). All the requirements of a hearing conservation program will be implemented if time-weighted average noise level exposures exceed 85 dBA or the maximum noise exposure limits promulgated by OSHA.

4.17 PERSONAL PROTECTIVE EQUIPMENT

All site personnel must be adequately protected from potential health and safety hazards on the site. A sufficiently complete and diverse inventory of PPE and safety equipment necessary to meet the anticipated hazards of this project shall be made available at the site to all employees. All site personnel and any site visitors shall be instructed in the proper use of this equipment before entry to the work area is permitted. For this project, RMC will ensure all necessary PPE is provided to site workers. Based on a review of existing data and site visits by the PM and site supervisor, the appropriate level for PPE and required procedures for its use will be periodically reviewed.

Preliminary determination of levels of protection indicates that site personnel shall not require PPE beyond the normal work clothing requirements of an open construction site. Should upgraded levels of protection be necessary, work activities will cease in that area until such time that this HASP can be revised, workers can receive additional training, and the required PPE can be provided.

Employees will be required to work in the following work-site construction clothing:

- Coveralls (poly/cotton) or long-legged trousers and long sleeved shirt
- Gloves, fabric or leather, as needed.
- Boots (e.g., chemical resistant with steel toes/shank)
- Safety glasses (when needed)
- Head covering

4.18 RESPIRATORY PROTECTION

No respirators will be required for this project. A specific respiratory protection program is not required for this project.

4.19 CONFINED SPACE ENTRY

No confined space entries are permitted on this project.

4.20 SITE CONTROL

The site supervisor is responsible for enforcing health and safety aspects as described in this HASP. The site supervisor also has the authority to stop any identified unsafe work activity or any operation that can cause significant adverse impact to the environment. It is essential to establish site control in order to ensure that personnel are properly protected against hazards in the work place, to confine the contaminated materials, and to prevent the spread of contaminated materials into clean areas.

4.21 FIRST AID

RMC will provide first aid kits on site, will list personnel working on-site who are trained in first aid, and will post response procedures. Any trained individuals who provide first aid on site will be acting in the capacity of Good Samaritans. Universal precautions against blood-borne pathogens will be practiced.

Note: If personal injury does occur on-site, a mishap report shall be completed and transmitted to the PM for review and submittal to EFANE, if required.

4.22 CONTINGENCY PLAN

Contingency plans for a variety of emergency scenarios are presented in the following subsections. These plans are based on specific situations that could occur during the project. An audible yell will notify site personnel of an emergency. In general, RMC site personnel will coordinate emergency response with the necessary emergency response agency. In case of an emergency, RMC will call the fire department as soon as possible. (Note that a telephone will be on site at all times during work activities.)

4.22.1 Physical Injury to Worker

For minor injuries, trained individuals acting as Good Samaritans will apply routine first-aid response. A first-aid kit will be located on RMC's service truck during this project. For major injuries, an ambulance will be summoned immediately. First aid responders will obtain information about the nature of the injury from the victim, if the victim is conscious. If the victim is unconscious, those providing first aid assistance will check for vital signs. Universal precautions will be followed. First aid responders who come in contact with a victim's body fluids will be afforded the opportunity to be tested for hepatitis B within 24 hours of exposure to blood/bodily fluids, per 29 CFR 1910.1030.

In the event of cessation of breathing and/or cessation of heartbeat, appropriately trained (qualified) personnel will administer cardio-pulmonary resuscitation. Again, qualified individuals will be acting as Good Samaritans.

In the event of bleeding, broken bones, shock, burns, heat exhaustion, heat stroke, seizure, or insect sting, on-site first-aid trained personnel will evaluate the situation, administer the appropriate temporary aid, and summon assistance from the on-base emergency response providers. If the injuries are severe enough that moving the victim may aggravate the injuries, the victim shall not be moved UNLESS there is immediate danger from surrounding conditions. Modified decontamination will be performed unless doing so will further threaten the victim's life or health.

4.22.2 Localized Fire

Smoking is not allowed at the job site. Because of the recent drought conditions, some indeterminate potential for grass and brush fires may exist. In the event of a fire at the site, RMC personnel will remove themselves from the site and notify appropriate local authorities.

4.22.3 Spill Control and Spill Cleanup Activities

Liquid materials are not anticipated on this project. However, all spills that result in discharge to surface water, drinking water, or sewers, or that migrate to them before the completion of cleanup, shall be reported immediately. RMC will immediately notify the local fire department of any product release upon

discovery, regardless of the amount. RMC will also notify the National Response Center (1-800-424-8802) and the EPA Regional Office (215-597-9800), if required. Cleanup will be to the satisfaction of the Government based on sound scientific and engineering principles.

A written report prepared by RMC shall be submitted to the EFANE Contracting Officer no later than seven days after a spill. The written report will be in narrative form and include, as a minimum, the following:

- Description of material spilled including identity, quantity, and any manifest number
- Whether the amount spilled is EPA/state reportable and when and to whom it was reported
- Exact time and location of spill, including description of the area involved
- Containment procedures initiated
- Summary of communications with the press or government officials
- Description of cleanup procedures employed or to be employed at the site including disposal location of spill residue

4.23 EQUIPMENT OPERATION CERTIFICATION

Common field equipment, such as backhoes and/or front end loaders, will be used. Any equipment operator must have evidence of training and experience to operate the assigned equipment.

4.24 HAZARD MONITORING

A summary of potential hazards associated with this project can be found on the following page.

4.25 EMERGENCY SERVICES

Emergency services will be made available through local emergency response providers. Site-specific telephone numbers will be determined before work commences and published in Appendix D of this plan.

SUMMARY OF SITE HAZARDS

Waste Types: Non-hazardous soil
Describe: Approximately 230 cubic yards
Characteristics: Corrosive ___ Flammable ___ Radioactive ___
Toxic __ Volatile ___ Reactive ___ Inert x__
Overall Hazard Is: High ___ Moderate ___ Low __ Unknown __ Minimal _x

Hazards of Concern (check as many as apply):

(x) Heat Stress
( ) Cold Stress
( ) Explosion/Flammable
( ) Confined Space
( ) Oxygen Deficient
(x) General Construction
(x) Projectiles/Eye Injuries
(x) Other, Specify: Ambient hazards
( ) Volatile Compounds
( ) Inorganic Chemicals
( ) Organic Chemicals
( ) Radiological
( ) Biological
( ) Noise
( )Trenching/Engulfment
( ) Lead Exposure

Fire Hazards
Low at work site.

Electrical Hazards
Not anticipated, but will be confirmed at the site.

5 APPENDICES

APPENDIX A – RFQ SCOPE OF WORK

APPENDIX B – REMEDIATION AREA

APPENDIX C – PRLIMINARY PADEP FORM U

APPENDIX D - EMERGENCY CONTACTS, WILLOW GROVE, PA

APPENDIX A – SCOPE OF WORK

SCOPE OF WORK (extracted from the request for quotation)

Section C - Descriptions and Specifications
SCOPE OF WORK

PERFORMANCE BASED STATEMENT OF WORK

TITLE: Site 5 – Fire Training Area Soil Removal
LOCATION: NAS/JRB Willow Grove, Willow Grove, PA

BACKGROUND:
The Site 5 – The former Fire Training Area (FTA) is located in the south-central portion of NAS JRB, approximately midway between Runway 10/28 and State Route 463. The site is located immediately to the south of Taxiway Juliet and covers an irregularly shaped area of approximately 1.25 acres. The training area was used from 1942 to 1975 for large-scale firefighting exercises, which included the disposal and burning of flammable liquid wastes generated by the Naval Air Station. Wastes including solvents, paint chemicals, xylenes, toluene, and various petroleum compounds were consumed at the rate of up to 4,000 gallons or more per year in these firefighting exercises. The area was also reportedly used for the drum storage of these flammable materials during the periods between burning exercises.

The FTA is today primarily covered by grasses, with some woody and brushy vegetation present within the southern portion of the area. The burn area is located in the south-central portion of the site. Two small (normally dry) "ponds" are immediately south of the former burning area.

A recent Addendum (Draft, 3/22/05), Reference A, to a 2002 RI Report collected and analyzed surface and shallow subsurface soil samples, 0 to 24 inches below ground surface, from 15 locations at Site 5 – FTA to compare levels of contaminants in the area currently relative to the sampling done in 1997. These sample locations generally mirror the locations sampled in 1997 for a direct side by side comparison, however two locations were moved from inside a recently installed fence to be included in the sampling area since the air strip, located inside the new fence, is a restricted area preventing current sampling. The 1997 analytical data had low concentrations of PAHs in the two soil sample locations now within the new air strip security fence.

The two locations that were moved and an added sample for the latest sampling were not intended to fill data gaps, they were included as additional sampling points to help determine if surface soil PAH concentrations had changed or migrated naturally and/or due to the new security fence installation. The Addendum RI Report (Draft, ltr. format) confirmed and documented a range of organic compounds (mainly polynuclear aromatic hydrocarbons (PAHs) in limited site surface soils which have been chosen for selected "hotspot" remediation/removal in the vicinity of the 4 to 5 soil samples that exceed PADEP MSCs for residential soil and/or USEPA residential RBCs (Risk-Based Concentrations) based on current ecological and future human unrestricted land use considerations.

TASK DESCRIPTIONS:

Task 1 – Remediate Soil
The Contractor shall remediate soil by removal for the following site with the following approximate dimensions/characteristics:

1. Site 5 - FTA is an irregularly shaped area of approximately 1.25 acres, selected "hotspot" areas identified in Reference A.

2. Depth of soil contamination in selected "hotspot" areas is approximately from zero to twenty-four (0 to 24) inches below ground surface.
3. The Contaminants of Concern (COC), including PAHs, TOC, and pH, and associated levels are listed in Reference A.
4. Provide clean backfill to bring excavated "hotspot" areas up to grade (exist. ground surface).

Task shall include, but not limited to, the following:

-Workplan including Overall Approach to Project including Preferred Remediation/Removal Method(s)
-Site Specific Health & Safety Plan
-Soil Remediation/Removal Plan incl. Transport and Disposal

Task 2 – Waste Characterization and Post-Excavation Sampling and Close-out Report
Sampling and analysis at the site shall be performed and reported to ensure compliance with the applicable federal, state and local environmental regulations.
Task shall include, but not limited to, the following:

-Waste Characterization Sampling Plan
-Confirmation Sampling & Analysis Plan
-Close-Out Report

DELIVERABLES:
Deliverables shall be as described in each task.

ADDRESSES:

EFANE: Naval Facilities Engineering Command
10 Industrial Hwy, MS #82
Lester, PA 19113-2090
Code EV32/SB
Attn: Mr. Steve Beebe, P.E., Project Lead (1 copy)
Attn: Mr. Ed Boyle (1 copy)
Attn: Mr. Jeffrey Dale (1 copy)
Attn: Ms. Lisa Yeutter, E.I.T. (1 copy)

ROICC: Resident Officer In Charge of Construction
NAS/JRB Willow Grove
BLDG. 78
Willow Grove, PA 19090
ATTN: Mr. V. Martucci
Ph. 215-773-2651 (2 copies)

NAS/JRB WILGRO: NAS/JRB Willow Grove
Bldg. 78
Willow Grove, PA
Environmental Dept.
ATTN: Mr. J. Edmonds (2 copies)

EPA: Ms. Lisa Bradford
Remedial Project Manager
Region III, U.S. EPA
1650 Arch St. (3HS13)
Philadelphia, PA 19103-2029 (2 copies)

PADEP: Ms. April Flipse
Pennsylvania Department of
Environmental Protection (PADEP)
2 E. Main Street
Norristown, PA 19401 (2 copies)

PERIOD OF PERFORMANCE:
The period of performance will commence on 31 May 2005 and end on 30 Nov 2005.

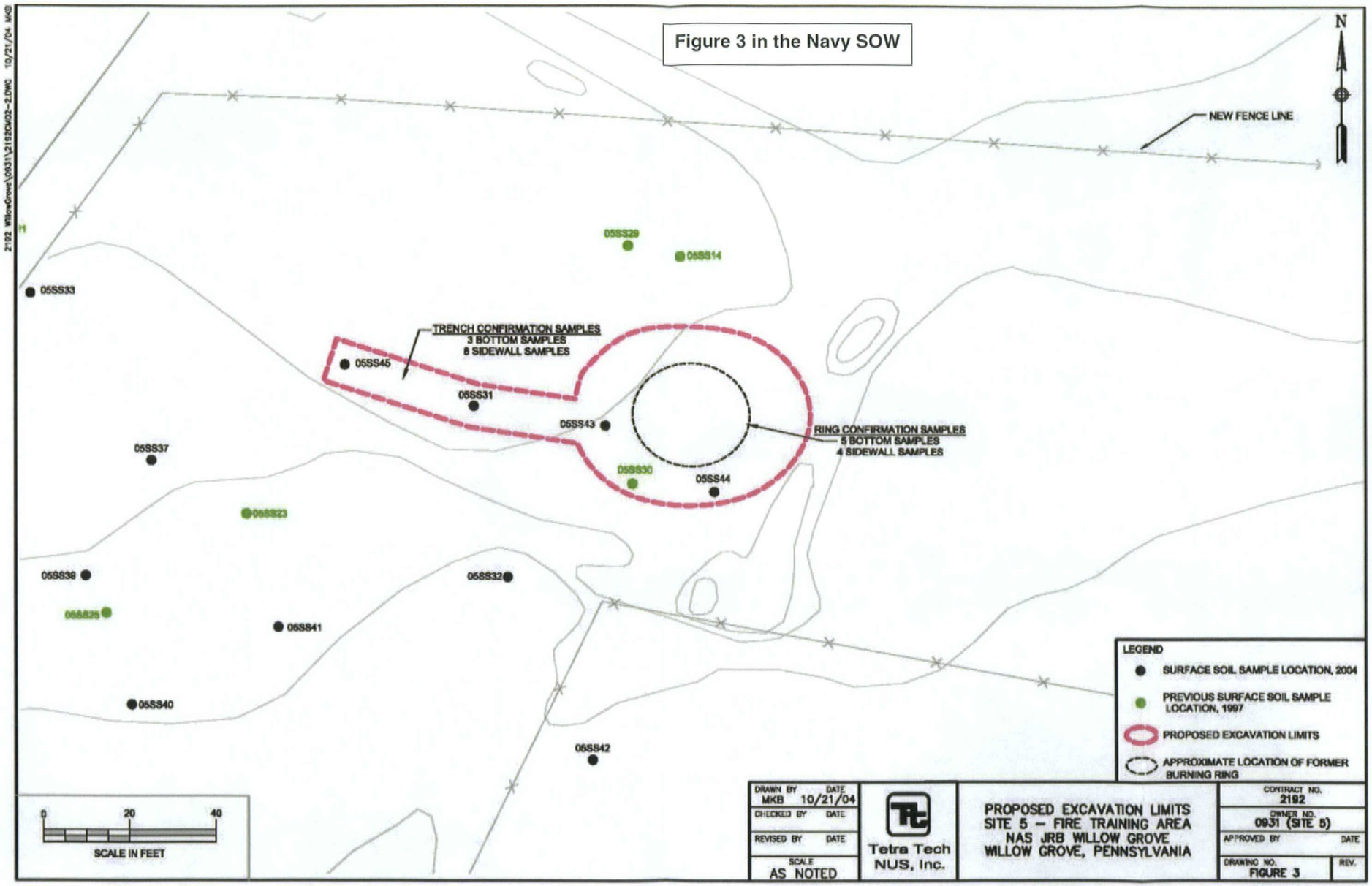
EXHIBITS INCORPORATED BY REFERENCE: The contractor shall consult the referenced documents as relative guidance in performance of all work.

A. Addendum Remedial Investigation Report
For Site 5 – Fire Training Area Soil
NAS JRB Willow Grove, Pennsylvania (Draft, 3/22/05, Letter Format)

PERFORMANCE REQUIREMENTS SUMMARY MATRIX:

Performance Objective	Performance Standard	Acceptable Quality Level	Method of Surveillance	Incentive
Remediate Soil	• Timeliness • Completeness	1.Remediation performed w/in 1 month of schedule 2.Documentation meets all reqmts of applicable Federal, state and local environmental regulations	1.Navy review of submitted documentation (100%) 2. Navy random inspection of the sites	• Potential for additional work • Performance evaluations
Waste Charac. & Post-Excav. Sampling and Close-out Report	• Timeliness • Completeness • data usability	1.documentation submitted on schedule 2.Samplng, analysis and reporting meet all reqmts of appl. Envir. regs 3. analytical data is 100% usable for intended purpose	1. Navy review of submitted documentation (100%)	• Potential for additional work • Performance evaluations • Reduced payment for unusable data

APPENDIX B – REMEDIATION AREA



APPENDIX C – PRELIMINARY PADEP FORM U

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

FORM U

REQUEST TO PROCESS OR DISPOSE OF RESIDUAL WASTE

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form U, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.

DEP USE ONLY
Date Received & General Notes

Date Prepared/Revised

SECTION A. LANDFILL CLIENT (LANDFILL OR PROCESSING FACILITY OWNER) INFORMATION

DEP Client ID#	DEP Client Type / Code
378	NPACO

Organization Name or Registered Fictitious Name
Clean Earth, Inc

SECTION B. LANDFILL SITE (LANDFILL OR PROCESSING FACILITY) INFORMATION

DEP Site ID#	Site Name	Landfill Permit ID#
	Clean Earth of Philadelphia, inc	301220

Site Contact Last Name	First Name	MI	Suffix
Tanner	Dane	M	

Site Contact Title	Site Contact Email Address
Laboratory Director	tannerd@cleanearthinc.com

SECTION C. GENERATOR CLIENT (GENERATOR OF THE WASTE) INFORMATION

Company Name — **DEP Generator ID#**
Naval Air Station Joint Reserve Base Willow Grove

Company Contact Last Name	First Name	MI	Suffix
Watkins	Gerald		

Company Mailing Address Line 1	Company Mailing Address Line 2
NASJRB Willow Grove	Highway 611

Company Address Last Line – City	State	Zip+4	Country
Willow Grove	PA		USA

Company Phone **Ext** **Company Email Address**

Company Contact Last Name	First Name	MI	Suffix

Contact Phone **Ext** **Contact Email Address**

If a Subsidiary, Name of Parent Company
United Stated Department of the Navy

Is the waste generated at the Company Mailing Address (noted above)? ☒ Yes ☐ No
If 'No', describe location of waste generation and storage.

Township **County** **State**

SECTION D. WASTE DESCRIPTION

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure	Time Frame
		230	☒ cu yd ☐ gal ☐ lb ☐ ton	Sept 2005 ☒ One Time

1. General Properties

a. **pH Range** 6 to 9 (based on analyses or knowledge)

b. **Physical State**
☐ Liquid Waste (EPA Method 9095)
☒ Solid (EPA Method 9095)
☐ Gas (ambient temperature & pressure)

c. **Physical Appearance** **Color** Soil brown **Odor** None
Number of Solid or Liquid Phases of Separation None
Describe each phase of separation.

d. **Attached is information from the generator certifying that a hazardous waste determination has been done and that the waste is not hazardous waste as defined in 40 CFR 261, as incorporated by reference at 25 Pa. Code 261a.1.** ☒ Yes ☐ No
Caution: If 'No', the application form is incomplete.

e. **Is the waste treated hazardous waste?** ☐ Yes ☒ No
If 'Yes', list the hazardous waste code(s) that apply to the hazardous waste before treatment.

If 'Yes', what treatment option was selected?

What limit was required to be met by the treatment option?

Provided a copy of the certification required under 40 CFR 268.7(a), as incorporated by reference at 25 Pa. Code 268a.1, that the waste meets all the land disposal restriction requirements, as specified in 40 CFR Part 268, Subpart D (Land Disposal Restrictions-Treatment Standards). ☐ Yes ☐ No

f. **Has the waste been delisted as a hazardous waste by DEP or US EPA?** ☐ Yes ☐ No ☒ N/A

g. **Has the waste been accepted for disposal/processing at another Pennsylvania facility?** ☐ Yes ☒ No
If 'Yes', list the facility permit ID number(s).

h. **Has an application for disposal/processing of the waste at another Pennsylvania facility been submitted?** ☐ Yes ☒ No
If 'Yes', list the facility permit ID number(s).

2. Chemical Analysis Attachments

a. **Has a detailed physical and chemical characterization of the waste and its leachate been conducted?** ☒ Yes ☐ No
If 'No', provide detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis.

If 'Yes', attached is a description of the waste sampling method, in accordance with the waste sampling plan as required in §271.611(a)(3) or §287.132(a)(3). ☒ Yes ☐ No

b. **Laboratory Registration Number** 68-00573

3. Process Description & Schematic Attachments

a. **Attached is a detailed description of the manufacturing and/or pollution control processes producing the waste.** ☒ Yes ☐ No
If 'No', provide explanation.

b. **Attached is a schematic of the manufacturing and/or pollution control processes producing the waste.** ☐ Yes ☒ No
If 'No', provide explanation.
No schematic appropriate for this site.

c. **Attached is the substantiation for a confidentiality claim (if portions of the information submitted are confidential).** ☐ Yes ☐ No ☐ N/A

4. Chemical Analysis Waiv r

Categories of residual wastes that qualify for the waiving of chemical analysis by the Department are listed below. Check the appropriate box(es) that match the waste proposed to be accepted for disposal.

- ☐ burnt demolition debris
- ☐ cured rubber scrap
- ☐ fabric/cloth/textile/leather wastes (excluding treatment sludges)
- ☐ food wastes (excluding treatment sludges)
- ☐ metal scrap (excluding powdered grindings or if contaminated with fluids or oils)
- ☐ shingle scrap
- ☐ waste plastic (excluding extrusion manufacturing & uncured resins)
- ☐ Other (explain)
- ☐ carpet scraps
- ☐ empty containers (uncontaminated)
- ☐ fiberglass insulation scrap
- ☐ hot drained used oil filters (non-terne plated)
- ☐ sawdust (excluding treated wood)
- ☐ waste paper
- ☐ wood wastes (excluding treated wood)

All waste types not listed above must be approved in writing in the permit by the Department prior to processing or disposal facility acceptance.

SECTION E. PROPOSED PROCESSING, STORAGE AND/OR DISPOSAL METHOD

Will any special handling procedures (besides direct disposal) described in the waste acceptance plan, be used when managing the waste? ☒ Yes ☐ No

If 'Yes', describe. Thermal Treatment

Is this material re-used for construction or operation of the facility? ☐ Yes ☒ No

If Yes', describe.

SECTION F. SOURCE REDUCTION STRATEGY

Form 25R must be completed by the generator and attached to this application unless waived in the instructions to that form.

Form 25R attached. ☐ Yes ☐ No ☒ Waived

SECTION G. CERTIFICATION OF GENERATOR

I hereby certify that the statements of fact contained therein are true and correct to the best of my knowledge, information and belief. This statement and verification is made subject to the penalties of 18 Pa. C.S.A. Section 4904, relating to un-sworn falsification to authorities.

Name of Responsible Official **Title**

Signature **Date**

SECTION H. CERTIFICATION OF PROCESSING OR DISPOSAL FACILITY

I hereby certify that the statements of fact contained therein are true and correct to the best of my knowledge, information and belief. This statement and verification is made subject to the penalties of 18 Pa. C.S.A. Section 4904, relating to un-sworn falsification to authorities.

Name of Responsible Official **Title**

Signature **Date**

APPENDIX D – EMERGENCY CONTACTS, WILLOW GROVE, PA

Points of Contact

Site: NASJRC WILLOW GROVE
Mr. Gerry Watkins (215) 773-2657

RMC Project Manager:
William T. Hall, P.E., 301-862-7501 (O) 301-863-7750 (H)

Site Supervisor: William T. Hall / Henry Briscoe

Emergency Services Telephone Numbers

Fire Department:
215-443-1911

Medical:
215-443-1911

Hospital:
215-443-1911

Ambulance Service:
215-443-1911

APPENDIX E – MODIFICATION TO WORK PLAN FOR EM-54

E.1 BACKGROUND

Based on a previously issued scope of work, RMC excavated the area shown in Figure 1-2 and Appendix B. Remediation confirmation samples were collected as indicated in 2-1. The results of the soil samples collected and analyzed from Figure 2-1 confirmed and documented a range of polynuclear aromatic hydrocarbon compounds (PAHs) in residual site soils that exceed the Pennsylvania Department of Environmental Protection (PADEP) medium specified concentrations (MSCs) for residential soil and/or USEPA residential risk-based concentrations (RBCs) based on current ecological and future human unrestricted land use considerations. The tabular results of the samples collected as shown in Figure 2-1 are listed in Table E-1. Based on the confirmation sample analytical results, a modified scope of work has been issued to excavate approximately 200 cubic yards (CY) of additional soil. Additional soil confirmation samples consisting of 8 bottom samples and 12 sidewall samples for the confirmation of remediation must be collected and analyzed.

This Appendix is an update to the general work plan contained in sections 1 and 2 of this document. All procedures and methodologies of sections 1 and 2 remain in effect for this appendix.

E.2 TASK DESCRIPTIONS FOR MODIFICATION ONE

E.2.1 Task Description – Task 1

Task 1 – Remediate Soil

The tasks associated with the remediation of the site are described below.

1. Excavate an additional 200 cubic yards of contaminated soil as shown on Figure E-1. For each of the two areas outlined in blue on the attached sketch, the existing excavation shall be expanded by excavating approximately 2 feet deeper and 2 feet wider.
2. Perform waste characterization and disposal for the removed soil.
3. Perform confirmation sampling for the new excavations in accordance with the original work plan, i.e., 8 base samples and 12 sidewall samples.
4. Backfill newly excavated areas.

Task shall include, but not be limited to, the following:

- Work plan including Overall Approach to Project including Preferred Remediation/Removal Method(s)(amend existing as necessary)
- Site Specific Health & Safety Plan (amend existing as necessary)
- Soil Remediation/Removal Plan including Transport and Disposal (amend existing as necessary)

Table E-0-1: Analytical Results for PAH Based on Figure 2-1

Sample ID:		#1 Bottom	#2 Side	#3 Side	#4 Bottom	#5 Side	#6 Side	#7 Bottom	#8 Side	#9 Side	#10 Bottom
Analyte:	**Units:**										
pH	pH Units	6.80	6.90	7.10	7.10	6.80	6.90	6.90	6.80	7.10	6.70
Percent Moisture	wt%	19.8	16.1	22.1	24.4	20.0	25.5	17.7	16.7	19.7	13.5
Acenaphthene	PPB	790	700	620	170	150	150	7100	8200	770	25000
Acenaphthylene	PPB	150	140	150	160	150	160	150	140	150	2600
Anthracene	PPB	3000	3000	2300	910	150	550	11000	23000	3300	52000
Benzo(a)anthracene	PPB	6600	8500	5200	2700	150	2400	14000	35000	11000	61000
Benzo(a)pyrene	PPB	5900	8700	3700	2300	150	2400	12000	26000	13000	9200
Benzo(b)fluoranthene	PPB	7700	11000	4900	3000	150	3100	15000	34000	16000	52000
Benzo(g,h,i)perylene	PPB	3700	4100	1600	1600	150	2200	7100	15000	9800	21000
Benzo(k)fluoranthene	PPB	2000	3800	1700	1200	150	1200	5500	9000	4900	7400
Chrysene	PPB	5700	8300	4300	2400	150	2300	14000	31000	11000	54000
Dibenzo(a,h)anthracene	PPB	1200	1400	560	460	150	520	2100	4900	2500	5700
Fluoranthene	PPB	11000	22000	9300	5300	150	4700	44000	94000	22000	180000
Fluorene	PPB	1400	1000	850	160	150	190	8600	12000	1300	37000
Indeno(1,2,3-c,d)pyrene	PPB	3800	4300	1800	1700	150	2000	7100	16000	9800	23000
Naphthalene	PPB	150	140	150	160	150	160	150	140	150	1400
Phenanthrene	PPB	9800	10000	8600	2800	150	1900	43000	78000	9800	170000
Pyrene	PPB	9200	16000	7500	4400	150	4100	35000	73000	19000	150000
TOC	PPM	198000	192000	71300	44400	37100	50900	213000	190000	185000	328000
Total PAH		72090	103080	53230	29420	2400	28030	225800	459380	134470	851300

Table E-1 Continued

Sample ID:		#11 Bottom	#12 Side	#13 Side	#14 Bottom	#15 Side	#16 Side	#17 Bottom	#18 Bottom	#19 Side	#20 Bottom	#21 Side
Analyte:	**Units:**											
pH	pH Units	7.10	7.20	7.30	7.50	7.60	7.30	7.20	6.80	7.20	7.20	7.20
Percent Moisture	wt%	21.4	19.9	27.4	15.8	18.6	20.1	23.4	21.8	21.6	19.3	22.4
Acenaphthene	PPB	7600	2400	320	140	150	150	160	150	310	320	150
Acenaphthylene	PPB	150	150	170	140	150	150	160	150	240	73	150
Anthracene	PPB	16000	9800	1100	480	150	240	840	150	1300	1800	410
Benzo(a)anthracene	PPB	13000	9600	3100	2300	330	1700	2800	500	6200	6700	720
Benzo(a)pyrene	PPB	10000	7300	2500	1900	300	1200	2400	500	5700	1400	280
Benzo(b)fluoranthene	PPB	14000	8800	3200	2600	360	1500	3200	670	7300	9900	1300
Benzo(g,h,i)perylene	PPB	4400	3000	1300	1100	190	680	1300	280	3000	2800	710
Benzo(k)fluoranthene	PPB	4400	3500	940	810	150	780	1100	230	2600	3000	1300
Chrysene	PPB	13000	8800	3000	2200	250	1500	2600	490	6300	5900	790
Dibenzo(a,h)anthracene	PPB	1500	1000	370	140	150	150	330	150	920	370	270
Fluoranthene	PPB	43000	29000	6400	3900	650	2500	4900	1000	10000	22000	1200
Fluorene	PPB	10000	3100	570	140	150	150	240	150	360	670	150
Indeno(1,2,3-c,d)pyrene	PPB	4900	3300	1200	1100	190	690	1300	250	3100	3200	670
Naphthalene	PPB	150	150	170	140	150	150	160	150	150	150	150
Phenanthrene	PPB	55000	28000	4400	1700	220	840	2000	400	4100	6400	430
Pyrene	PPB	30000	21000	6500	3800	540	2700	5000	890	7700	17000	1300
TOC	PPM	82600	169000	67600	210000	47600	35900	61200	43300	177000	54800	39400
Total PAH		227100	138900	35240	22590	4080	15080	28490	6110	59280	81683	9980

E.2.2 Task Description -- Task 2

Task 2 – Waste Characterization and Post-Excavation Sampling and Close-Out Report

Sampling and analysis at the site shall be performed and reported to ensure compliance with the applicable federal, state, and local environmental regulations.

Task shall include, but not be limited to, the following:

- Waste Characterization Sampling Plan (amend existing as necessary)
- Confirmation Sampling & Analysis Plan (amend existing as necessary)
- Close-Out Report (include both original SOW and Amendment No. 1 results)

E.3 EXCAVATION PLAN

Based on Figure 2-1, the Navy has marked the additional areas to be excavated. The Navy sketch follows as Figure E-1. The Navy sketch has been further amended by RMC to show the location of confirmation samples and to illustrate the general work requirements at the site. The RMC amended sketch is shown on Figure E-2.

E.4 GENERAL SEQUENCES OF TASKS REQUIRED TO ACCOMPLISH CONTRACT REQUIREMENTS

The general sequence of tasks is as follows:

1. Soil characterization grab samples as required by Clean Earth (see Table 1-2). Additional documentation as required by Clean Earth, such as updated PADEP Form U, will be submitted to Clean Earth along with the laboratory analytical results.
2. Upon approval by Clean Earth, RMC will mobilize to the site and clear brush and grass around the perimeter of the existing excavation as required to safely work in the area. RMC will also pump out the existing excavation in order to work within the existing excavation.
3. Using a backhoe or other earth-moving equipment, approximately 200 CY will be excavated and immediately transferred into trucks for transfer to Clean Earth. Dripping from the truck beds will not be allowed.
4. Eight bottom and twelve sidewall confirmation samples will be collected and sent to a certified laboratory. The laboratory will be asked to provide one week turn around on analysis.
5. The results of the analysis will be transmitted to the Navy electronically.
6. As soon as approval is granted from the Navy, an outside supplier of fill dirt will be located and the potential fill dirt analyzed for RCRA metals and volatile and semivolatile organic compounds.
7. The entire excavation will be backfilled using a combination of fill dirt available at the site and fill dirt from the outside source.
8. The remaining tasks from the original work plan will be completed.

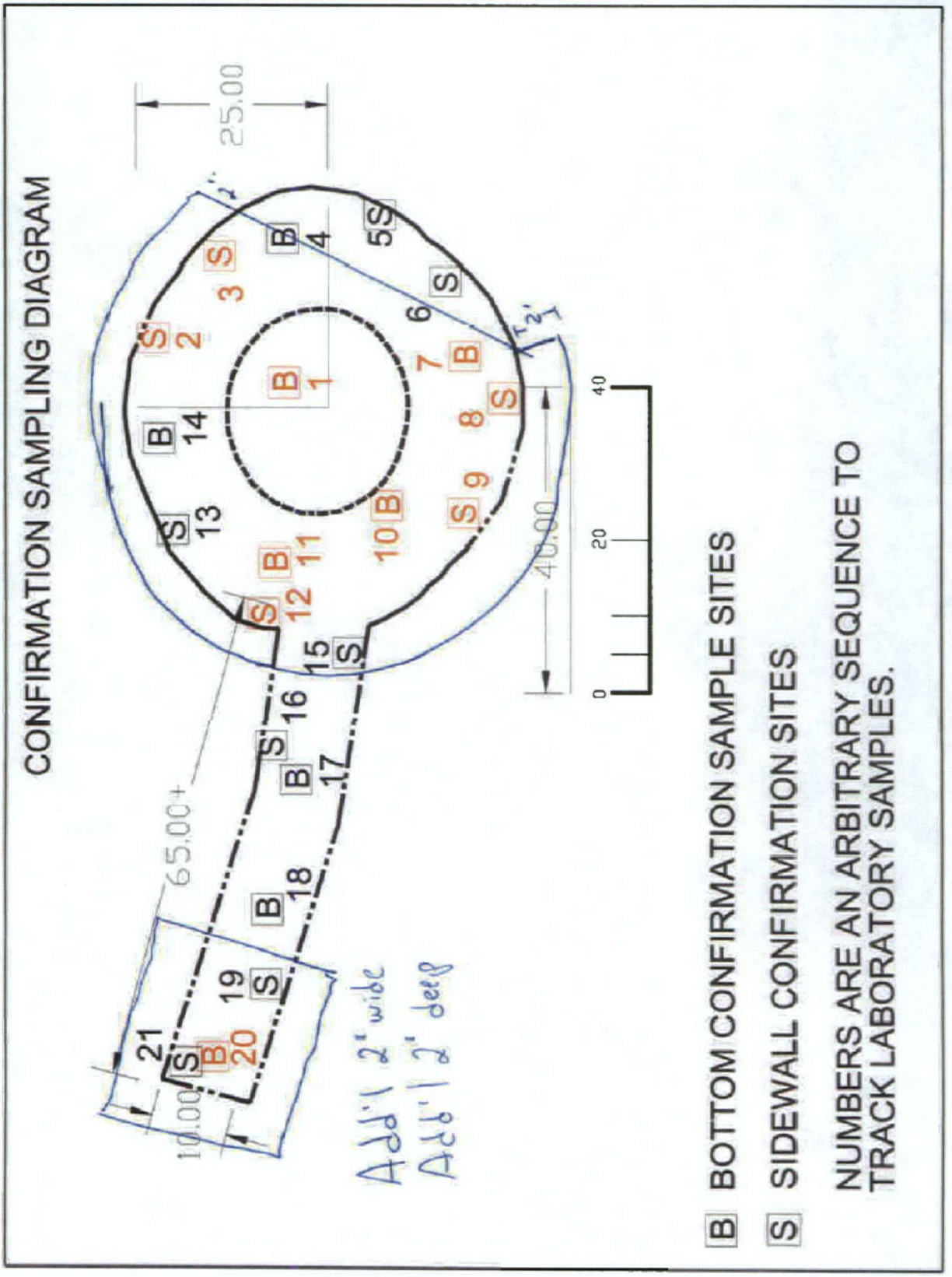


Figure E-1: Site Sketch Illustrating Excavation Requirements Provided by the Navy

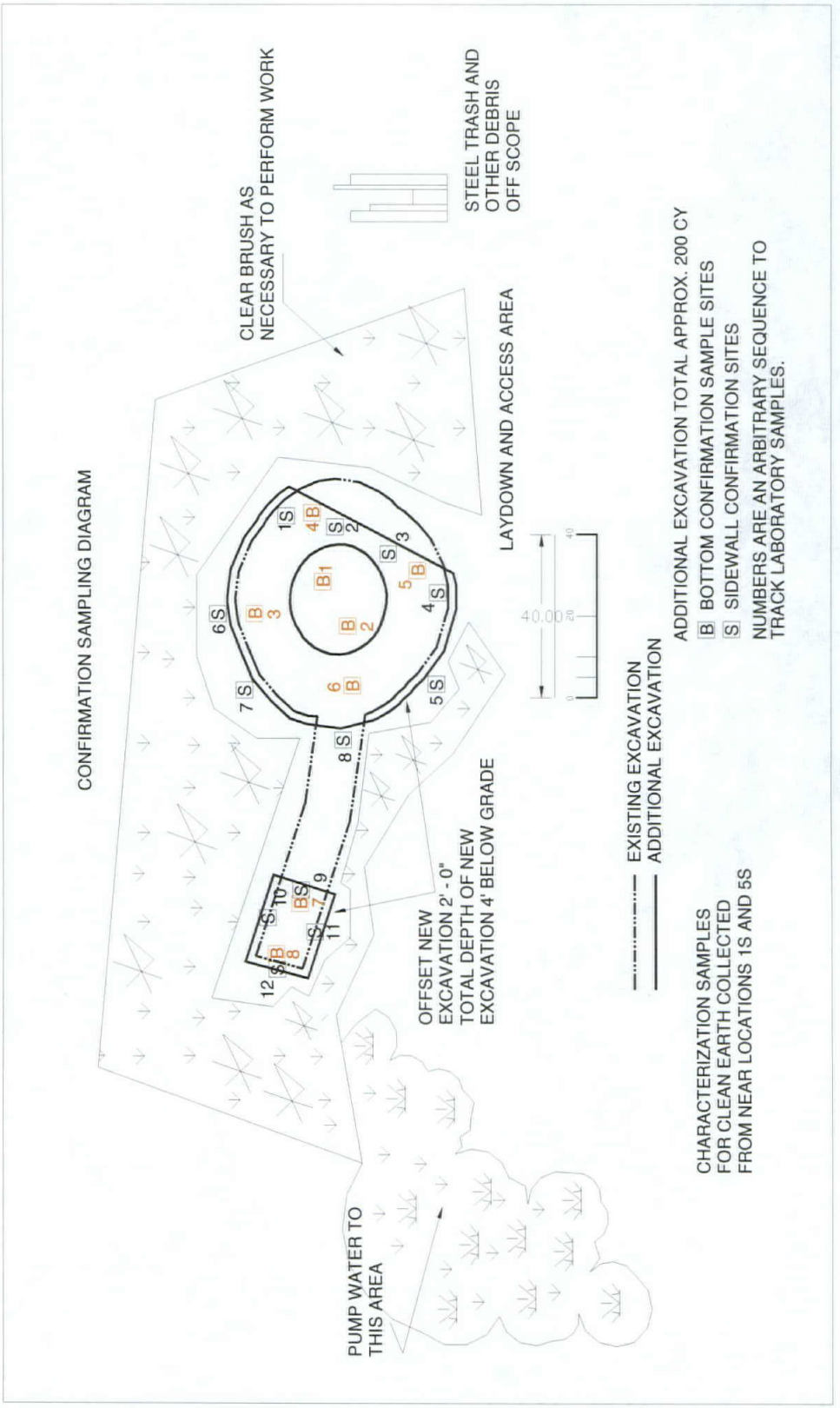


Figure E-2: Site Sketch Illustrating Work Requirements and Work Plan

E.5 SPECIFIC TASK REQUIREMENTS

E.5.1 Pumping Residual Water

As may be seen from Figure E-3, there is residual water in the existing excavation. The quantity of water will depend on recent storm events, but it appears that it is currently receding at a slow pace. A portable pump will be brought to the site to clear the residual water from the excavation. As soon as possible a sump will be dug in the new excavation area to provide a convenient place for seepage to accumulate and to provide a convenient place to accomplish necessary maintenance pumping to reduce the dampness of the overall excavate.

Water will be pumped in such a manner that the bottom is minimally disturbed and to avoid sucking stones into the intake of the pump. The discharge will be through designed filter bags on the outlet of the pump, and if necessary on the inlet hose.

E.5.1 Drip Free Transportation

The Clean Earth disposal site has stringent restrictions on free water, and transport trucks will not be allowed to drip free liquid. Plastic bed liners are discouraged by Clean Earth because they are hard to handle at the facility. Therefore, each load must be managed and loaded to optimally reduce the amount of free water so that any load will not drip. This will generally be accomplished by the excavation subcontractor by staging freshly excavated material around the interior of the excavation until the free water drains. After the site is pumped down the material above the pump level will drain to the pump level. The last loads may require some special attention to prevent dripping, and the special attention will be determined at the site.

E.6 SOIL CHARACTERIZATION SAMPLES

From Table 1-2, Clean Earth has estimated that two or three soil samples will be required for this work. Two soil characterization samples for Clean Earth have already been collected and submitted to American Analytical Laboratories. The samples were collected according to the procedures of Section 3.2.4, and the approximate location of each sample is noted on Figure E-2.

E.7 CURRENT CONDITIONS AT THE SITE

The excavated site was not backfilled due to the levels of PAH compounds. The excavation area actually consists of semicompacted stone fill with soil-filled interstices. The stone fill continues up to and under the taxiway and runway. The site is currently an open excavation approximately half filled with water. The water results from direct precipitation, runoff and seepage from precipitation that soaks into the stone fill. Seepage was obvious from the first excavation, and during times of snow-melt, the entire excavated basin filled with water. Overflow is generally southwest into a reedy wet area.

The water is clear, and there is no visible sheen. Marsh grasses have taken root along the perimeter, and the edges of the basin have become overgrown with brush, reeds, and grasses. There are tadpoles in the water and other small aquatic critters.

The site is illustrated in Figure E-3.

E.8 DELIVERABLES

Deliverables shall be as described in each task and delivered to the following contact list unless updated by the Navy.

ADDRESSES:

MIDLANT:
BRAC PMO Northeast
4911 South Broad Street
Building 679, PNBC
Philadelphia, PA 19112
Attn: Mr. Curt Frye (1 copy)
Attn: Ms. Lisa Yeutter, E.I.T. (1 copy)

ROICC:
Resident Officer In Charge of Construction
NAS/JRB Willow Grove
BLDG. 78
Willow Grove, PA 19090
ATTN: Mr. V. Martucci
Ph. 215-773-2651 (2 copies)

NAS/JRB WILGRO:
NAS/JRB Willow Grove
Bldg. 78
Willow Grove, PA
Environmental Dept.
ATTN: Mr. J. Edmond (2 copies)

EPA:
Ms. Lisa Bradford
Remedial Project Manager
Region III, U.S. EPA
1650 Arch St. (3HS13)
Philadelphia, PA 19103-2029 (2 copies)

PADEP:
Ms. April Flipse
Pennsylvania Department of
Environmental Protection (PADEP)
2 E. Main Street
Norristown, PA 19401 (2 copies)

E.9 SCHEDULE

All tasks have been summarized into a tabular summary schedule that follows at the end of this Appendix in Table E-2.

E.10 MODIFICATIONS TO EXISTING SITE-SPECIFIC HEALTH AND SAFETY PLAN GENERALLY NOT REQUIRED

The existing site specific HASP does not require alteration with the exception of the following important items.

1. Equipment operation in previously excavated area.

> *Equipment operators must be alert to the fact that they will be working in a previously excavated area, and total excavations will now reach four feet deep. Operators must be alert not to damage equipment entering and exiting the existing excavation, get equipment stuck in the excavation, or cause the equipment to tip in an unsafe manner.*

Only experienced and trained equipment operators will be used on this project.

2. Brush clearing.

Brush and grass clearing will be accomplished by hand-held power scythes or similar equipment. Appropriate clothing must be worn while brush clearing. Ticks, mosquitoes, and biting flies are in the area, so insect repellent should be used. The ground is uneven and difficult to see.

3. Heat effects on personnel.

Labor supervisors must be alert to the signs of heat stress, heat exhaustion and heat stroke.

Figure E-3: Current Site Conditions

Table E-0-2: Summary Schedule of Tasks

TASK NO.	TASK DESCRIPTION	PRELIMINARY SCHEDULE
1	Collection of samples for waste characterization and transfer to analytical laboratory	13 July; Analytical results received by 27 July
2	Approval from Clean Earth	29 August
3	Mobilization to the site and pumpout of water	1 August
4	Clearing of brush around excavation site	1 August
5	Removal of contaminated soil and transfer to Clean Earth of Philadelphia	3 August
6A	Confirmation sampling of the excavation and transfer of samples to analytical laboratory	4 August; Analytical data received by 18 August
6B	Sampling of additional backfill and transfer of samples to analytical laboratory	4 August; Analytical data received by 18 August
7	Submission of summary report of confirmation sampling	20 August
8	Backfill and top soil placement	24 August
9	Final project close-out report	30 August